

LISTING OF CLAIMS

1-13. (Cancelled)

14. (Original) A tubular medical set for the transfer of blood, said set having main blood flow tubing and a flexible branch tube connected in branching relation to the main tubing for connection to a source of physiological, cell-free solution and for retaining a blood-solution interface, said set further comprising a device to suppress pressure pulses tending to disrupt said blood-solution interface in said branch tube while allowing the transfer of pressure across said pressure pulse suppression means at essentially all times and permitting at any time the relatively unrestricted flow of said cell free solution through said branch tubing to the main blood flow tubing, said device to suppress pressure pulses comprising a moveable member that freely, by action of flowing fluid, moves through a range of positions, said device to suppress pressure pulses being designed to permit fluid flow in the direction opposed to said relatively unrestricted flow of said cell free solution in an amount 1 to 50 percent of the magnitude of said relatively unrestricted flow at maximum rate, under conditions of normal use.

15. (Original) The tubular medical set of claim 14 in which said moveable member comprises a ball.

16. (Original) The tubular medical set of claim 14 in which said device to suppress pressure pulses comprises a duckbill valve having an imperfection, causing the valve to permit large volume flow in one direction from the branch tube to the main blood flow tubing and a smaller volume of flow in the opposite direction.

17. (Previously Presented) The tubular medical set of claim 14 in which said pressure pulse suppression means comprises a moveable member having a central, reduced-width portion bracketed by enlarged-width portions for partial sealing, said

moveable member being positioned in an in-line flow chamber in the flexible branch tube, said flow chamber defining an inwardly extending constriction which extends to retain said central, reduced-width portion of the moveable member, to permit said moveable member to reciprocate back and forth relative to said constriction so that one enlarged width portion or another enlarged width portion engages said constricted portion of the chamber so that bidirectional flow is permitted, the enlarged width portions being shaped whereby flow of liquid through said constricted portion in one direction is greater in magnitude than the liquid flow in the other direction under conditions of use, said one direction being from the branch tube to the main blood flow tubing.

18. (Original) The tubular medical set of claim 17 in which the increased-width portion pointing away from the main blood flow tubing defines a second dimension of width that is no more than about half a first dimension of width, to facilitate liquid flow.

19-27. (Cancelled)

28. (Currently Amended) A tubular medical fluid set comprising an in-line bubble trap chamber having a top wall and a tubular side wall, said top wall defining a port which communicates with flow tubing of said tubular set, said port communicating with a port tube extending longitudinally into said chamber adjacent to said side wall, said port tube and having an inner tube end spaced below said top wall, said inner tube end ~~defining a wall that directs~~ directing flow out of said tube circumferentially of said bubble trap chamber, whereby ~~blood~~ medical fluid entering said chamber through said port wall is directed circumferentially about said chamber side wall, said chamber having a component which defines a baffle to convert circumferential flow above said

tube end into turbulent flow, to prevent formation of a ~~blood~~ whirlpool having a significant, centrally depressed upper surface.

29. (Previously Presented) The tubular set of claim 28 in which said chamber defines a liquid level therein having a predetermined air volume which has a volume of at least 4 cc.

30. (Currently Amended) A tubular medical fluid set comprising an in-line bubble trap chamber having a top wall, a port communicating with flow tubing of the tubular set, said port communicating with a port tube extending into said chamber, said port tube ~~and~~ having an inner tube end spaced below said top wall, said tube end being positioned to direct flow out of said tube circumferentially into the bubble trap chamber, whereby blood entering said chamber through said inner tube end is directed circumferentially about said chamber, said chamber having a component other than said port tube which serves as a baffle, said baffle being radially outwardly spaced from the center of said chamber and extending longitudinally along an upper portion of said chamber and terminating at a position above said port tube, to convert circumferential flow into turbulent flow at the level of said baffle, and to prevent formation of a blood whirlpool having a significant, centrally depressed upper surface, and whereby blood at about the level of the tube end and below is free to circumferentially flow without interference by the baffle.

31. (New) The tubular set of claim 30 in which said baffle comprises a tube that is joined to an inner surface of a side wall of said bubble trap.

32. (New) The tubular set of claim 31 in which said port tube also extends longitudinally and comprises a tube that is joined to an inner surface of a side wall of said bubble trap.

33. (New) The tubular set of claim 30 in which said chamber defines a liquid level therein having a predetermined air volume which has a volume of at least 4 cc.

34. (New) The tubular set of claim 30 in which said port tube also extends longitudinally and comprises a tube that is joined to an inner surface of a side wall of said bubble trap.

35. (New) A tubular medical fluid set comprising an in-line bubble trap chamber having a top wall, a port communicating with flow tubing of the tubular set, said port communicating with a port tube extending longitudinally into said chamber within a side wall of said chamber while being spaced from the longitudinal axis of said bubble trap chamber, said port tube having an inner tube end spaced below said top wall, said inner tube end being positioned to direct flow out of said tube whereby blood entering said chamber through said inner tube end is directed circumferentially about said chamber, to provide circumferential flow of blood below said inner tube end, while blood in said chamber above said tube end is suppressed from substantial circumferential flow by the longitudinally extending port tube in said chamber, so that circumferential flow is converted into turbulent flow above said tube end.

36. (New) The tubular set of claim 35 in which said medical fluid in said chamber below said inner tube end is free to flow circumferentially without direct interference by a baffle.

37. (New) The tubular set of claim 28 in which said medical fluid in said chamber below said inner tube end is free to flow circumferentially without direct interference by a baffle.

38. (New) The tubular set of claim 28 in which said baffle comprises a tube other than said port tube, said other tube being joined to an inner surface of a side wall of said bubble trap.

39. (New) The tubular set of claim 28 in which said inner tube end defines a single flow inlet.

40. (New) The tubular set of claim 30 in which said inner tube end defines a single flow inlet.

41. (New) The tubular set of claim 35 in which said inner tube end defines a single flow inlet.